

IV.—*Brief Descriptions of new Thysanoptera*.—II. By
 RICHARD S. BAGNALL, F.L.S., F.E.S. (Hope Department
 of Zoology, University Museum, Oxford).

Suborder TEREBRANTIA.

Family Thripidæ.

Scirtothrips signipennis, sp. n.

♀.—Length 1·2 mm.

Light lemon-yellow, first antennal joint almost white, 5 distally very lightly tinged with grey, 6 with distal two-thirds (or thereabouts) and 7 and 8 wholly grey-brown. Fore-wings grey-brown, second and apical fifths white or light grey; hind-wings with middle brown, corresponding to the long dark patch of upper wing.

Head transverse, about 0·8 as long as broad. Eyes rather large and coarsely faceted, pigment very deep purplish black; ocelli with crimson crescentic margins. Antennæ twice as long as the head, slender; relative lengths of joints approximately:—16 : 22 : 32 : 30 : 32 : 32 : 7 : 13—1 and 2 much broader than any of the following, and 6 not divided. Double trichomes on 3 and 4 long and very slender. Mouth-cone short, brown at tip; maxillary palpi 3-jointed, joints 2 and 3 practically subequal in length.

Prothorax about as long as head and about 1·6 times as broad as long, surface sparsely and irregularly set with very minute setæ; one postero-marginal spine near each hind-angle, short, only 0·25 the length of prothorax. Legs somewhat stout, hind-tibia with a series of moderately fine spines on distal half within, and tarsus with a series of similar spines near apex. Pterothorax nearly 1·45 times as broad as the prothorax, and about as long as broad. Wings slender, reaching only to the sixth abdominal segment; cilia fuscous, those of hind margins very long; fore-wing with three minute, widely spaced setæ on distal half of upper vein, and lower vein with but four setæ. Hind-wing with median vein continued almost to apex, very prominent through dark area.

Abdomen elongate-ovate, dorsal surface finely and wavyly striate, in parts reticulate; segments 9 and 10 with moderately long and rather fine bristles, 9 being furnished with a shorter dorsal pair which are somewhat widely separated.

This species somewhat closely resembles *Euthrips cingulatus*, Karny, from which it is easily separated by the prothoracic bristle at each hind-angle, the uniform light yellow colour of body, and the coloration of the antennæ. The coloration of the wings is about the same. The relative lengths of the antennal joints are also distinctive.

Type. In British Museum of Natural History.

Hab. CEYLON: Peradeniya, 1 ♀ taken by Mr. A. Rutherford from under leaf-sheaths of banana, 16. 6. 13 (Entomological Research Committee).

Pseudothrips glaucus, sp. n.

♀.—Length 0·95, breadth of mesothorax 0·28 mm.

General colour light grey-brown, apex of abdomen slightly darker; legs somewhat lighter than the body. Antennæ darker grey-brown, with joints 1 and 3 a little lighter. Wings greyish yellow.

Head transverse, about 0·65 as long as broad, practically as long as prothorax. Mouth-cone almost reaching across prosternum; palpi rather long. Antennæ more than twice as long as head; joint 3 pedicellate, 6 simple, not divided. Relative lengths of joints approximately:—10 : 22 : 27 : 24 : 22 : 26 : 5 : 8.

Prothorax 1·85 times as broad as long, one long and stout bristle near each hind-angle. Pterothorax large. Legs moderately long and stout. Wings long, reaching almost to tip of abdomen; upper vein of fore-wing with an unbroken series of 15–18, and lower vein with 13–15 setæ.

Abdomen elongate-ovate, posterior margin of eighth tergite fringed. Bristles at hind-margin of ninth tergite long, but those of tenth comparatively short, excepting a pair of long dorsal bristles.

This species is easily separated from *P. inequalis* (Beach) by its colour, the undivided sixth antennal joint (and relative lengths of joints), shorter prothorax, and presence of dorsal bristles on tenth abdominal segment.

Type. In Hope Collections, University Museum, Oxford.

Hab. Cape Town, 1 ♀ from *Sebæa* (*Dr. R. Marloth*).

Physothrips antennatus, sp. n.

♀.—Length 1·3 to 1·4 mm.

Colour dark brown, crimson hypodermal pigmentation

especially noticeable in thorax. Fore-femora basally and all tibiæ distally shaded to pale yellowish-white, all tarsi yellow. Basal half of third antennal joint light yellowish-brown and distal half (the constricted part) of both 3 and 4 lighter than the basal half. Wings grey-brown.

Head 0·8 as long as broad across eyes, and nearly as long as the prothorax; checks gently diverging to base. Antennæ 2·7 times as long as the head; relative lengths of joints 3-8 approximately:—38 : 56 : 30 : 40 : 7 : 13. Joint 4 curiously constricted and produced in the form of a stem distally.

Fore-wing with a series of 10 spines in upper vein, commencing at the basal fourth and extending to the distal third, and 2 at apex; lower vein with a series of 13, commencing just beyond the first bristle in the long series of upper vein.

Abdomen elongate, ninth segment with a pair of dorsal bristles in addition to the postero-marginal series.

This species comes near to *sjostedi* (Tryb.), *usitatus*, Bagn., and *variabilis*, Bagn., but is readily separated from these and all other described species of the genus by the long fourth antennal joint and its curious distal stem.

Type. In British Museum of Natural History.

Hab. Uganda (*C. C. Gowdey*). Mr. Gowdey writes that this species feeds on the spores of the coffee-fungus, *Hemeleia vastatrix*.

Thrips hololeucus, sp. n.

♀.—Length 1·0-1·2, breadth of mesothorax 0·27 mm.

Colour to the unaided eye white, under a moderate power from very light greyish-yellow to a deeper shade in dark specimens. Antennæ with the first joint white or colourless, 2-7 light greyish-brown, basal halves of 3 and 4 lighter, and 5 also lighter basally.

Head transverse, 1·37 times as broad as long, and not quite as long as the prothorax; posterior fourth faintly and irregularly transversely striate. Checks gently arcuate; mouth-cone pointed, reaching across prosternum, maxillary palpi long and slender, third joint the longest. Eyes occupying one-half the length of the head, coarsely faceted, pilose; pigmentation deep black. Ocelli with yellowish crescentic hypodermal pigmentation, a short curved seta on each side of the anterior one. A series of short dorsal setæ on an irregular line drawn behind the eyes. Antennæ with basal joints subapproximate, 2·25 times as long as the head; third

joint pedicellate; relative lengths of joints as follows:— $8 : 13 : 17 : 16 : 13 : 17 : 5$ —2 distinctly broader than any of the following, 5 and 6 somewhat broadly united; double trichomes on 3 and 4 slender and only moderately long.

Prothorax 1.5 times as broad as long, surface faintly and irregularly striate; the two bristles at each posterior angle from 0.3 to 0.34 as long as the prothorax, stout; a series of short postero-marginal setæ, of which the inmost pair is slightly the longest. Dorsal surface irregularly set with setæ. Pterothorax about as long as broad. All legs fairly long and stout, sparingly setose, setæ on the fore-margins of all tibiæ forwardly curved; hind tibiæ with series of short spines on distal third within. Wings reaching to ninth abdominal segment, faintly tinged greyish-yellow; cilia and spines dark. Costa and veins of fore-wing distinct; upper vein with a series of 4–5 basal setæ, 3 terminating at juncture with lower vein, then 4 widely and somewhat regularly spaced ones occupying the distal half; costa with 28 setæ, increasing in length distally, those towards the apex being as long or longer than the breadth of the wing; lower vein regularly set with 15–16 setæ. Cilia on fore-margins of both pairs somewhat sparse and widely spaced; on hind margin close, long, and wavy.

Abdomen elongate-ovate, about twice (or a little more) as long as broad; segments 2 and 3 the broadest, gently narrowing from 3 to 7 and thence more sharply to tip. Eighth tergite with a very fine fringe. Terminal bristles on 9 and 10 long and stout, about 1.5 times as long as the respective segments bearing them, and 9 with a pair of shorter dorsal bristles. Lateral abdominal bristles moderately long and stout, all light greyish-brown.

A distinctive species.

Type. In Hope Collections, University Museum, Oxford.

Hab. JAPAN: Kobe, July 1913 (*J. E. A. Lewis*).

Thrips albipes, sp. n.

♀.—Length 0.9 to 1.1, breadth of mesothorax 0.24 mm.

Head yellowish-white, with greyish-brown cheeks; prothorax golden-yellow; pterothorax also golden-yellow, but deeper and usually shaded with brown. Abdomen rich brown, first (and sometimes the second) segment lighter; all setæ dark. All legs yellowish-white or light lemon-yellow. Antennæ with first segment grey, 3 and sometimes extreme

base of 4 light lemon-yellow; 2 and 4 to 7 brown, 2 sometimes lighter distally. Fore-wings smoky-brown, basal fourth light.

Head almost as in *hololeucus*, about 1.25 times as broad as long, and about as long as the prothorax. Eyes as in *hololeucus*, pigmentation deep purplish-black; ocelli with crimson crescentic pigmentation. Mouth-cone not quite reaching across prosternum; maxillary palpi long, with middle joint the shortest; labial palpi long and slender. Antennæ about 2.3 times as long as the head; relative lengths of joints approximately:—7 : 12 : 17 : 16 : 12 : 17 : 5—2 broader than any of the following, 3 pedicellate, and 5 and 6 rather broadly jointed.

Prothorax 1.5 times as long as broad, with setæ as in *hololeucus*, dorsal surface not striated. Pterothorax about as broad as long. Legs as in *hololeucus*, hind-tibiæ shorter, with a series of short setæ on the distal half within. Wings reaching to the ninth abdominal segment, fore-wings about 15 times as long as broad across middle. Veins of fore-wing not distinct, upper vein with 3 widely-spaced setæ in distal half; lower vein with a series of 14 and costa 26 to 30 setæ. Cilia as in *hololeucus*. Hind-wing with a dark median vein to apex.

Abdomen ovate or, when segments are fully extended, elongate-ovate, apically rather sharply narrowed and pointed. Eighth tergite very finely fringed. Terminal bristles long, ninth segment with a pair of short widely-separated bristles (0.3 to 0.4 the length of the long ones), which are inwardly directed distally. Lateral abdominal bristles somewhat long.

Also a distinctive species.

Type. In Hope Collections, University Museum, Oxford.

Hab. JAPAN: Okinawa, Luchu Is., on nasturtium, May, and at Kobe, with *T. hololeucus*, sp. n., July 1913 (*J. E. A. Lewis*).

Suborder TUBULIFERA.

Docessissophothrips frontalis, sp. n.

Length about 5.5 mm.

Colour deep blackish-brown; fore-tibiæ light yellowish-brown, all tarsi dark yellowish-brown; wings smoky-brown, cilia darker. Antennæ absent in the unique example.

Head twice as long as broad, almost as in *D. major*, Bagn., but with the vertex produced into a prominent hump, with

the front margin truncate and having the anterior ocellus on the truncate plane facing forwards. The posterior three-fourths is dorsally gently and evenly arcuate, and the surface is irregularly and rather deeply furrowed dorso- and ventrolaterally. Cheeks set with numerous short setæ. Postocular bristles long and colourless; a second shorter and weaker pair set within the longer pair and on about the same line.



Docessissophothrips frontalis, sp. n. Head and prothorax viewed laterally, with right front leg.

Prothorax as in *D. major*, bristles at the anterior and posterior angles, together with mid-lateral and postero-marginal pairs, long, slender, and colourless; those on posterior margin the longest. Pterothorax as broad as width across the fore-coxæ and only slightly longer than broad. Wings reaching to the eighth abdominal segment. Fore-femora and tibiæ apparently without the long conspicuous bristles seen in *D. major*; inner margin of fore-tibiæ with numerous rather long setæ (as long as the breadth of the tibia).

Abdomen elongate, gently and roundly narrowed from seventh segment to base of tube. Tube about 0.65 the length of the head, terminal hairs very weak, about 0.7 as long as tube, colourless distally. Bristles on ninth segment about as long as the tube, colourless; other lateral abdominal bristles moderately long, faintly tinged with yellow, or colourless.

Type. In Hope Collections, University Museum, Oxford.

Hab. JAPAN: one example collected by Mr. John E. A. Lewis.

Androthrips flavipes, sp. n.

♂.—Length about 2.3 mm.

Thorax and abdomen dark grey- to blackish-brown, the former a little less deep in colour; head yellowish-brown, with

cheeks dark greyish-brown. All legs (excepting coxæ) yellow. Antennæ with joints 1 and 2 dark brown, the latter lighter apically; 3 and 5 yellow, with very faint tinge of grey distally; 4 yellow, grey-brown near apex; 6 yellow, distinctly tinged with grey distally; and 7 and 8 light grey-brown.

Head approximately 1.2 times longer than broad and 1.5 times as long as the prothorax, sides parallel. Mouth-cone exceptionally short, maxillary palpi with second joint very long. Antennæ 1.55 times as long as the head, joints 3 and 4 much broader than any of the others. Relative lengths of joints approximately:—12 : 18 : 22 : 22 : 19 : 18 : 17 : 12.

Prothorax transverse, about twice as broad as long; bristles at posterior and anterior angles, and the mid-lateral and postero-marginal pairs present. The postero-marginal pair and those at posterior angles long, the latter 0.6 as long as the prothorax. Pterothorax transverse. Fore-femora strongly incrassate, with a stout, blunt, tooth-like projection at the base within, the inner margin straight and set with a few very minute "teeth." Fore-tarsus set with a stout, sharp, curved tooth.

Wings practically clear, rather broad; fore-wings apparently not constricted as in *Haplothrips*, with 8-11 duplicated cilia.

Abdomen about as broad as the pterothorax, elongate, narrowing evenly from sixth segment to base of tube. Tube 0.6 the length of head, about twice as long as broad at base, and twice as broad at base as at apex. Terminal hairs longer than tube, but very slender (and difficult to see) distally, colourless, except near base. Lateral abdominal bristles long and slender, faintly knobbed; none so long as the tube.

Type. In the British Museum of Natural History.

Hab. CEYLON: Peradeniya, 1 ♂ taken by Mr. A. Rutherford from *Memecylon umbellatum*, 28. 6. 13 (Entomological Research Committee).

*Gynaikothrips karnyi**, sp. n.

Length 1.9, breadth of mesothorax 0.42 mm.

Colour deep blackish-brown, thorax and distal half of tube not quite so dark; all tibiæ and tarsi light lemon-yellow, and antennal joints 3-8 lemon- to golden-yellow.

Head about 1.42 times as long as broad and practically

* Named in honour of Dr. H. Karny, who has done so much work on gall-thrips.

twice as long as the prothorax ; sides parallel. Mouth-cone reaching across prosternum, somewhat pointed. Eyes occupying about one-third the length of the head, finely faceted ; postocular bristles moderately long and stout. Vertex raised in form of a hump. Ocelli large. Antennæ 1·5 times as long as the head ; relative lengths of joints approximately :— 10 : 16 : 23 : 22 : 22 : 21 : 18 : 13—7 and 8 broadly jointed, 8 narrowly pyriform, pointed apically.

Prothorax very short and strongly transverse, at least 2·3 times as broad across posterior angles as long ; all bristles present, long and rather stout, pointed ; postero-marginal pair 0·8 as long as the prothorax. Pterothorax a little wider than width across fore-coxæ and as long as broad. Legs normally stout and long. Wings reaching to eighth abdominal segment, cilia smoky.

Abdomen about as broad as the pterothorax, gently narrowing from fifth segment. Tube 0·6 as long as the head, slightly more than twice as long as broad at base, and twice as broad at base as at apex. Terminal hairs coloured at base and continued as long colourless filaments, about 0·85 as long as the tube. Lateral abdominal bristles yellow, long and rather stout on segments 6–8 at least ; those on 9 particularly long and very slender (and indistinct) apically, up to 1·7 times the length of the tube.

Type. In the British Museum of Natural History.

Hab. CEYLON : Peradeniya, ex marginal leaf-galls of black pepper (*Piper nigrum*), A. Rutherford, 21. 7. 13 (Entomological Research Committee).

Edemothrips (?) *brevicollis*, sp. n.

♀.—Length 1·9, breadth of mesothorax 0·4 mm.

Colour of abdomen black, first segment brownish ; thorax grey-brown ; head yellow to yellowish-brown, cheeks darker. Antennæ with joints 1 and 2 yellow, 3–5 yellow, lightly shaded with grey, the fifth darker ; 6 chestnut-brown, rather lighter at base, and 7 and 8 dark blackish-brown.

Head only 0·9 as long as broad, and as long as the prothorax, cheeks feebly arcuate, converging towards base. Eyes occupying about 0·34 the length of head. Ocelli small, posterior pair widely separated, almost touching the inside margins of eyes. Postocular bristles about as long as the eye, and interocular pair only about 0·5 as long. Antennæ nearly twice as long as the head ; relative lengths of joints approximately :— 14 : 19 : 23 : 21 : 20 : 19 : 14 : 9. Joint 2 constricted near base, 3 clavate, 4 and 5 roughly

clavate, 6 with apex rather broadly truncate, and 7 and 8 broadly united.

Prothorax about 2·3 times as broad as long; bristles at hind-angles and the postero-marginal pair present, the first-named long, about 0·5 as long as prothorax. Pterothorax transverse, about 1·25 times as broad as long. Legs rather stout and long; each intermediate and hind-femur with a short stout seta on the outer margin beyond middle. Wings absent.

Abdomen elongate-ovate, 0·65 the total length of the insect, broadest at about fifth segment, where it is 1·4 times as broad as the mesothorax.

Tube stout, about 0·8 as long as the head, 1·75 times as long as broad at base and less than 0·5 as broad at apex as at base; terminal hairs short and weak, not quite 0·6 as long as the tube. Lateral abdominal bristles not long, but noticeably strong, especially those on segments 7-9.

Type. In Hope Collections, University Museum, Oxford.

Hab. JAPAN: Okinawa, Luchu Is., 1 ♀ collected by Mr. J. E. A. Lewis.

Trichothrips lewisi, sp. n.

♂.—Length about 1·45, breadth of mesothorax 0·285 mm.

Colour lemon-yellow, antennæ very lightly tinged with grey; first two antennal joints, frons and cheeks, distal half of mesothorax, sides of pterothorax, first abdominal segment, and the anterior corners of segments 2-8 shaded with grey-brown.

Head 1·1 times as long as broad and 1·3 as long as the prothorax. Cheeks constricted behind eyes and near base. Eyes prominent, occupying 0·35 the length of the head, widely separated. Ocelli rather large, posterior ones well apart from inner margins of the eyes. Postocular bristles long and slender; interocular pair rather short. Mouth-cone blunt, broadly rounded at apex, reaching a little more than halfway across prosternum. Antennæ twice as long as the head; relative lengths of joints as follows:—13 : 14 : 20 : 16 : 16 : 16 : 13·5 : 16; apical joint narrowly pyriform.

Prothorax trapezoidal, twice as broad across hind-angles as long, with a distinct median line; mid-lateral, postero-marginal bristles, and pair at hind-angles present, long and slender, the postero-marginal pair the longest. Pterothorax about as long as broad; wings reduced, narrow and vestigial in character, reaching to hind-margin of first abdominal segment. Legs moderately long and stout; fore-femur

incrassate, fore-tibia stout, and tarsus armed with a sharp broad tooth, and also with a hidden curved tooth near apex.

Abdomen only slightly broader than the pterothorax, practically subparallel to seventh segment, and thence gently rounded to base of tube; well-developed wing-retaining bristles on segments 2-6. Tube about 0.6 the length of head, 1.6 times as long as broad near base, and about 0.4 as broad at apex as at base, evenly narrowed from base to tip. Terminal hairs about as long as the tube, slender. Lateral abdominal bristles long and slender on segments 1 to 9, mostly as long as or longer than tube.

A very distinct species of the group characterized by the short mouth-cone, and readily recognized by the form of the head, the relative lengths of the antennal joints, and the distinctive type of coloration. I have pleasure in naming the species in honour of its discoverer.

Type. In Hope Collections, University Museum, Oxford.

Hab. JAPAN: Okinawa, Luchu Is., 1 ♂, collected by Mr. J. E. A. Lewis, May 1913.

V.—Diagnoses of new Races of African Ungulates.

By ERNST SCHWARZ.

THIS is the third paper dealing with the Ungulates brought home by the Duke of Mecklenburg's second Central-African expedition. In working out the forms now described, the material in the British Museum has been studied, and has been of the utmost value. The thanks of the writer for the facilities afforded are due to Mr. Oldfield Thomas, the Curator of Mammals.

Hippopotamus amphibius tschadensis, subsp. n.

Type locality. Katana, Bornu.

Type. ♀ old. Senckenberg Museum, Frankfurt-a.-M. Journal no. 805. Original no. A. 75.

A rather short and broad-faced race, with the orbits strongly projecting and decidedly laid forward.

Orbits strongly projecting; when seen from in front their lateral margin is seen to be placed almost vertically, their upper margin to be much higher than the lambdoid crest. Zygomatic arches slightly narrower than in *H. a. amphibius*,